**I Claim:**

1. A substantially rectangular fluid storage tank, said fluid storage tank having a length, width, height, first and second ends, first and second sides, top and bottom, said fluid storage tank comprising:

(a) an internal frame structure, said frame structure comprising:

(1) a plurality of first plate girder ring frames having inner sides disposed to the interior of said fluid storage tank and outer sides, said first plate girder ring frames running along the width and height of said fluid storage tank and spaced along the length of said fluid storage tank,

(2) a first plurality of truss structures running along the width and height of said fluid storage tank and spaced along the length of said fluid storage tank, each one of the said first truss structures (i) corresponding to one of the said first plate girder ring frames and (ii) disposed in the plane of and inside one of the said first plate girder ring frames, said first plurality of truss structures thereby supporting the inner sides of said first plate girder ring frames,

(3) a plurality of second plate girder ring frames having inner sides disposed to the interior of said fluid storage tank and outer sides, said second plate girder ring frames running along the height and length of said fluid storage tank and spaced along the width of said fluid storage tank,

wherein the intersection of said plate girder ring frames forms a plurality of attachment points, thereby forming one integrated internal frame structure; and

(b) a plate cover surrounding said internal frame structure, said plate cover having an inner side and an exterior side, said inner side of said plate cover disposed to the outer sides of said first and second ring frames.

2. A fluid storage tank as claimed in claim 1, wherein said internal frame structure (a) further includes:

(4) a second plurality of truss structures running along the height and length of said fluid storage tank and spaced along the width of said fluid storage tank, each one of the said second truss structures (i) corresponding to one of the said second plate girder ring frames and (ii) disposed in the plane of and inside one of the said second plate girder ring frames, said second plurality of truss structures thereby supporting the inner sides of said second plate girder ring frames.

3. A fluid storage tank as claimed in claim 2, wherein said first plurality of truss structures and said second plurality of truss structures intersect and are connected together by sharing common structural members at said intersection.

4. A fluid storage tank as claimed in claim 3, wherein said internal frame structure (a) further includes:

(5) a plurality of third plate girder ring frames having inner sides disposed to the interior of said fluid storage tank and outer sides, said third plate girder ring frames running along the length and width of said fluid storage tank and spaced along the height of said fluid storage tank, wherein the intersection of said third plate girder ring frames with

said first and second plate girder ring frames forms a plurality of attachment points, thereby forming one integrated internal frame structure.

5. A fluid storage tank as claimed in claim 4, wherein at least one of said first, second or third plate girder ring frames further includes flanges located on said inner sides of said plate girder ring frames.

6. A fluid storage tank as claimed in claim 5, wherein said flanges form a "T" shape on said inner side of said plate girder ring frames with said depth of said plate girder ring frames, said depth defined as the distance between said inner side and said outer side of said plate girder ring frame in a plane containing both said inner side and said outer side of said plate girder ring frame.

7. A fluid storage tank as claimed in claim 6, wherein at least one of said first, second or third plate girder ring frames are solid.

8. A fluid storage tank as claimed in claim 6, wherein at least one of said first, second or third plate girder ring frames contain perforations.

9. A fluid storage tank as claimed in claim 8, further including:

(c) a plurality of stiffeners and stringers interconnected and arranged in a substantially orthogonal pattern, said plurality of stiffeners and stringers having an inner and outer side, said outer side of said stiffeners and stringers attached to said inner side of said plate cover, said plate cover and the said inner sides of said stiffeners and stringers attached to the outer side of said plate girder ring frames.

10. The fluid storage tank of claim 9, wherein said plate cover is between 6 to 13 millimeters thick.

11. The fluid storage tank of claim 10, wherein said plate cover is comprised of a plurality of joined steel plates.

12. A fluid storage tank as claimed in claim 10, wherein at least one of said first, second or third plate girder ring frames has a depth of 1.5 to 3.5 meters, said depth defined as the distance between said inner side and said outer side of said plate girder ring frame in a plane containing both said inner side and said outer side of said plate girder ring frame.

13. A fluid storage tank as claimed in claim 12, wherein at least one of said first, second or third plate girder ring frames has a depth that is 1 to 10 percent of said fluid storage tank's height.

14. A fluid storage tank as claimed in claim 10, wherein said fluid storage tank has an internal fluid storage capacity of greater than 100,000 cubic meters.

15. A fluid storage tank as claimed in claim 10, wherein an item selected from said plate girder ring frames, said truss structures and said plate cover is made of a cryogenic material.

16. A fluid storage tank as claimed in claim 15, wherein said cryogenic material is selected from stainless steels, high nickel steel alloys, aluminum, and aluminum alloys.

17. A fluid storage tank as claimed in claim 10, wherein at least one of said first or second truss structures is comprised of (i) a plurality of both

vertical, elongated supports and horizontal, elongated supports, connected to form a gridwork of structural members with a closed outer periphery, and (ii) a plurality of additional support members secured within and between said connected vertical and horizontal, elongated supports to thereby form each said truss structure.

18. A fluid storage tank as claimed in claim 17, wherein said intersection and connection of said first plurality of truss structures and said second plurality of truss structures includes at least a portion of said vertical elongated supports serving as a vertical elongated support in both said first plurality of truss structures and said second plurality of truss structures.

19. A method of constructing a fluid storage tank comprising:

(A) providing a plurality of plates, a plurality of stiffeners and stringers, and a plurality of plate girder ring frame portions;
(B) forming a plate cover from one or more of said plurality of plates;
(C) joining a portion of said plurality of stiffeners and stringers to a first side of said plate cover; and
(D) joining a portion of said plurality of plate girder ring frame portions to said first side of said plate cover, thereby forming a panel element.

20. The method of claim 19, further comprising:

(E) repeating steps (B) through (D) to form a plurality of panel elements.

21. The method of claim 20, further including:

(F) forming a plurality of tank modules from said plurality of panel elements.

22. The method of claim 20, further comprising:

(F) transporting said plurality of panel elements from a first location to a second location; and

(G) assembling said plurality of panel elements to form a fluid storage tank, thereby forming a plurality of plate girder ring frames inside said storage tank from said plurality of plate girder ring frame portions.

23. The method of claim 22, further including:

(H) providing a plurality of truss structure elements to said second location;

wherein said assembling step (G) further includes assembling said plurality of truss structure elements to form a truss structure, said truss structure (i) corresponding to one of the said plate girder ring frames and (ii) disposed in the plane of and inside one of the said plate girder ring frames, said truss structure thereby supporting the inner sides of said plate girder ring frame.

24. The method of claim 23, wherein said assembling step (G) includes forming said fluid storage tank having a length, width, height, first and second ends, first and second sides, top and bottom, said fluid storage tank comprising:

(a) an internal frame structure, said frame structure comprising:

(1) a plurality of first plate girder ring frames having inner sides disposed to the interior of said fluid storage tank and outer sides, said first plate girder ring frames running along the width and height of said fluid storage tank and spaced along the length of said fluid storage tank,

(2) a first plurality of truss structures running along the width and height of said fluid storage tank and spaced along the length of said fluid storage tank, each one of the said first truss structures (i) corresponding to one of the said first plate girder ring frames and (ii) disposed in the plane of and inside one of the said first plate girder ring frames, said first plurality of truss structures thereby supporting the inner sides of said first plate girder ring frames,

(3) a plurality of second plate girder ring frames having inner sides disposed to the interior of said fluid storage tank and outer sides, said second plate girder ring frames running along the height and length of said fluid storage tank and spaced along the width of said fluid storage tank,

wherein the intersection of said plate girder ring frames forms a plurality of attachment points, thereby forming one integrated internal frame structure; and

(b) a plate cover surrounding said internal frame structure, said plate cover having an inner side and an exterior side, said inner side of said plate cover disposed to the outer sides of said first and second ring frames.

25. A method as claimed in claim 24, wherein said repeating step (E) includes forming a plurality of top panels, a plurality of side panels and a plurality of bottom panels.

26. A method as claimed in claim 25, wherein said assembling step (G) includes joining one said bottom panel to first ends of two said side panels, joining one said top panel to second ends of said two side panels, thereby forming a tank mid-section module comprising a portion of said internal frame structure.

27. The method of claim 21, further comprising:

(G) transporting said plurality of tank modules from a first location to a second location; and

(H) assembling said plurality of tank modules to form a fluid storage tank, thereby forming a plurality of plate girder ring frames inside said storage tank from said plurality of plate girder ring frame portions.

28. The method of claim 27, further including:

(I) providing a plurality of truss structure elements to said second location; -

wherein said assembling step (H) further includes assembling said plurality of truss structure elements to form a truss structure, said truss structure (i) corresponding to one of the said plate girder ring frames and (ii) disposed in the plane of and inside one of the said plate girder ring frames, said truss structure thereby supporting the inner sides of said plate girder ring frame.

29. The method of claim 28, wherein said assembling step (G) includes forming said fluid storage tank having a length, width, height, first and second ends, first and second sides, top and bottom, said fluid storage tank comprising:

(a) an internal frame structure, said frame structure comprising:

(1) a plurality of first plate girder ring frames having inner sides disposed to the interior of said fluid storage tank and outer sides, said first plate girder ring frames running along the width and height of said fluid storage tank and spaced along the length of said fluid storage tank,

(2) a first plurality of truss structures running along the width and height of said fluid storage tank and spaced along the length of said fluid storage tank, each one of the said first truss structures (i) corresponding to one of the said first plate girder ring frames and (ii) disposed in the plane of and inside one of the said first plate girder ring frames, said first plurality of truss structures thereby supporting the inner sides of said first plate girder ring frames,

(3) a plurality of second plate girder ring frames having inner sides disposed to the interior of said fluid storage tank and outer sides, said second plate girder ring frames running along the height and length of said fluid storage tank and spaced along the width of said fluid storage tank,

wherein the intersection of said plate girder ring frames forms a plurality of attachment points, thereby forming one integrated internal frame structure; and

(b) a plate cover surrounding said internal frame structure, said plate cover having an inner side and an exterior side, said inner side of said plate cover disposed to the outer sides of said first and second ring frames.

30. A method as claimed in claim 29, wherein said repeating step (E) includes forming a plurality of top panels, a plurality of side panels and a plurality of bottom panels.

31. A method as claimed in claim 30, wherein said forming step (F) includes forming tank mid section modules and tank end section modules.

32. A method as claimed in claim 31, wherein said forming step (E) includes joining one said bottom panel to first ends of two said side panels, joining one said top panel to second ends of said two side panels, thereby forming a tank mid-section module comprising a portion of said internal frame structure.

33. A method of constructing a fluid storage tank comprising:

(A) providing a plurality of panel elements, a plurality of tank modules, or a combination thereof, wherein said plurality of panel elements and said plurality of tank modules include plate covers having a plurality of stiffeners, stringers and plate girder ring frame portions attached to a first side of said plate cover;

(B) assembling said plurality of panel elements, said plurality of tank modules, or combinations thereof to form a fluid storage tank, thereby

forming a plurality of plate girder ring frames inside said storage tank from said plurality of plate girder ring frame portions.

34. The method of claim 33, wherein said plurality of panel elements and said plurality of tank modules were formed in a first location and said assembling step (B) is performed in a second location.

35. The method of claim 34, further including:

(C) providing a plurality of truss structure elements;

wherein said assembling step (B) further includes assembling said plurality of truss structure elements to form a truss structure, said truss structure (i) corresponding to one of the said plate girder ring frames and (ii) disposed in the plane of and inside one of the said plate girder ring frames, said truss structure thereby supporting the inner sides of said plate girder ring frame.